AP822e

AP822i

AP822

Dual-radio, Two-stream 802.11ac Wireless Access Point

802.11ac performance for small to large environments

The AP822 catalyzes the migration to Gigabit Wi-Fi by bringing the power of enterprise-wide, full channel 802.11ac to more customers. The AP822 is a cost-effective solution designed to meet the mid-range performance requirements of offices, schools, universities, hospitals, hotels, and retail stores, and it supports up to an aggregate 1.17 Gbps data rate for the most demanding business applications such as video and voice.

The AP822 is positioned to accelerate the adoption of 802.11ac into more cost-sensitive market segments. For schools, this means a more cost-effective solution can be deployed to meet the growing throughput demand from on-campus wireless devices. Hotels can more easily offer a richer Wi-Fi experience where availability of high-quality wireless services is often the primary criterion—above other amenities—for making reservations. Providing high-speed, high-capacity wireless LAN services for the small and medium business is now more attainable with the AP822.

The AP822 access point allows administrators to prioritize applications to improve the user experience based on Meru's unique ability to associate specific applications with deployed channel layers. For schools, this means Learning Management System applications can be assigned to one dedicated channel layer, while online classroom video feeds can be dedicated to another channel layer. For healthcare, life-critical applications such as patient monitoring can be assigned to one channel layer, doctor and nursing applications can be assigned to a second layer, and patient applications can be placed on a third channel layer.

Meru's single-channel option within the MobileFLEX architecture uniquely allows the AP822 to support wide Wi-Fi channels in real-world deployments, effectively doubling the data rate over 802.11n and dramatically increasing throughput for Meru customers. The 2x2:2 spatial stream design provides very high throughput (VHT) data rates for the majority of tablets and smartphones, at a competitive price. Additionally, customer feedback has indicated up to a 40% increase in performance with legacy 802.11n devices because of the hardware design benefits of 802.11ac. The AP822 also provides unique roaming support. Meru's patented Air Traffic Control® technology enables the network to control client roams, resulting in the industry's lowest roaming latency figures—a true zero-handoff.

Like other Meru access points, the AP822 integrates seamlessly with our E[z]RF® Application Suite, Identity Manager (IDM), and other application solutions to bring intelligent management and resilient wireless services to your network.

Features	Benefits
• Supports IEEE Std 802.11ac-Draft with two spatial streams	• Provides an optimized 802.11ac experience, with VHT capabilities
• Supports pervasive 80 MHz channel usage	• Only vendor to recommend one or two 80 MHz channel usage for maximum 802.11ac throughput
• Supports radio frequency virtualization	• No channel planning, and delivers seamless mobility
• Supports multiple operating modes: centralized, distributed, MESH, bridged, and VPN tunnel	• Offers flexible deployment options for diverse customer requirements
• Integration with Meru controllers and management software applications	• Offers full management and security assurances
• Supports either internal or external antennas	• Provides a choice of two models to suit your needs

AP822

TECHNICAL SPECIFICATIONS

OPERATING MODES

Centralized deployment mode
Distributed deployment mode
MESH mode
Bridge mode
Remote VPN tunnel mode

SECURITY

WEP, WPA-PSK, WPA-TKIP, WPA2-AES, 802.11i, 802.1X (EAP-TLS, EAP-TTLS, PEAP, LEAP, EAP-FAST, EAP-SIM, EAP-AKA, and EAP-MD5)

802.1X and captive portal authentication against local database on the controller, RADIUS, and Active Directory

RADIUS-assisted per-user and per-ESSID access control via MAC filtering

MANAGEMENT

Centrally managed by any Meru controller running System Director 6.1 or later

Automatically discovers controllers and downloads configuration settings for plug-and-play deployment

Upgrades and management via System Director / E(z)RF® Network Manager

Support for SNMP

WIRELESS SPECIFICATIONS

Model Introduction
AP822i dual-radio, single-band IEEE Std 802.11b/g/n for 2.4 GHz band and IEEE Std 802.11a/n/ac-Draft for 5.x GHz band access point with four internal omnidirectional antennas

AP822e dual-radio, single-band IEEE Std 802.11b/g/n for 2.4 GHz band and IEEE Std 802.11a/n/ac-Draft for 5.x GHz band access point with four RP-SMA connectors and four external omnidirectional antennas

Supported radio technologies
Dual-radio access point for indoor environment

2x2:2SS (two spatial streams)

Supported 2.4 GHz and 5.x GHz for single-band, dual-radio operation; data rate up to 1167 Mbps

IEEE Std 802.11n/a/g/ac-Draft with Draft Orthogonal Frequency Division Multiplexing (OFDM)

IEEE Std 802.11b with 5 MHz channels and Direct Sequence Spread Spectrum (DSSS)

IEEE Std 802.11ac Draft WAVE1 with 20/40/80 MHz (HT20/HT40/VHT80) channel width

IEEE Std 802.11n with 40 MHz (HT40) channel width

IEEE Std 802.11a/g with 20 MHz channel

Supported Modulation
IEEE Std 802.11ac Draft: BPSK, QPSK, 16-QAM, 64-QAM, and 256-QAM
IEEE Std 802.11a/g/n: BPSK, QPSK, 16-QAM, and 64-QAM
IEEE Std 802.11b: BPSK, QPSK, CCK

Supported MCS Index
Supported MCS0~MCS9 for IEEE Std 802.11ac Draft (NSS=1~2)
Supported MCS0~MCS15 for IEEE Std 802.11n

Supported Frequency Bands
2.400 ~ 2.4835 GHz (ISM)
5.150 ~ 5.250 GHz (UNII-1)
5.250 ~ 5.350 GHz (UNII-2, upon DFS approval)
5.470 ~ 5.725 GHz (UNII-2 Extended, upon DFS approval)

5.725 ~ 5.825 GHz (UNII-3) Country-Specific Restrictions Apply; Adjusted by Controller upon Approval; Data Rates Supported (MBPS):
IEEE Std 802.11ac Draft two streams: 13.0 ~ 866.7 Mbps (MCS0-HT20 @ 800 nS~MCS9-VHT80 @ 400 nS)
IEEE Std 802.11ac Draft per stream: 6.5 ~ 433.3 Mbps (MCS0-HT20 @ 800 nS ~ MCS9-VHT80 @ 400 nS)
IEEE Std 802.11n Two streams: 13.0 ~ 300.0 Mbps (MCS8-HT20@800nS to MCS15-HT40@400nS)
IEEE Std 802.11n per stream: 6.5 ~ 150.0 Mbps (MCS0-HT20 @ 800nS to MCS7-HT40@400nS)
IEEE Std 802.11a/g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps
IEEE Std 802.11b: 1, 2, 5.5, and 11 Mbps

Transmit Power (TX) and Receive Sensitivity (RX) per Stream

Configuration	Maximum conductive point transmit power per stream (dBm)	Maximum EIRP per stream (dBm), External Antenna SKU	Maximum EIRP per stream (dBm), Internal Antenna SKU	RX (dBm)
802.11b	20.0	24.0	23.0	-91
802.11g	19.0	23.0	22.0	-77
802.11n, 2.4 GHz HT20	18.0	22.0	21.0	-73
802.11n, 2.4 GHz HT40	18.0	21.3	21.0	-71
802.11a	18.0	24.0	22.0	-77
802.11n, 5 GHz, HT20	17.0	23.0	21.0	-73
802.11n, 5 GHz, HT40	17.0	23.0	21.0	-70
802.11ac Draft, 5 GHz, HT20	17.0	23.0	21.0	-71
802.11ac Draft, 5 GHz, HT40	16.0	22.0	20.0	-65
802.11ac Draft, 5 GHz, VHT80	16.0	22.0	20.0	-63

PHYSICAL SPECIFICATIONS

SKU
AP822i: Four integrated dual-band omnidirectional metal PIFA antennas
AP822e: Four reverse polarity SMA connectors; shipment comes with four omnidirectional antennas

Specification of Default Antenna

	Model Number	Description
1	MERU-P1633	Internal antenna (Default in AP822i): MERU-P1633 2.4/5.x GHz 3/4 dBi dual-band omnidirectional antenna
2	ANT-01ABGN-0406-O	External antenna (Default in AP822e): ANT-01ABGN-0406-O, 2.4/5 GHz 3.3/6 dBi omnidirectional antenna with a single RP-SMA jack

Specification of Optional External Antennas (Sold Separately)

	Model Number	Description
1	ANT-ABNG230-W	2.4/5.x GHz 2/3 dBi omnidirectional rubber ducky antenna with a single RP-SMA jack
2	ANT-ABGN-470	2.4/5.x GHz 4.7/4.7 dBi omnidirectional rubber ducky antenna with a single RP-SMA jack
3	ANT-I2ABGN-0304-O	2.4/5.x GHz 3/4 dBi omnidirectional ceiling mount antenna, with 36-inch external coaxial cables and 2x RP-SMA jacks
4	ANT-O4ABGN-0607-PT	2.4/5.x GHz 6/7 dBi directional patch wall/pole-mount antenna, with 36-inch external coaxial cables and 4x RP-SMA jacks
5	ANT-O4ABGN-0606-O	2.4/5.x GHz 6/6 dBi omnidirectional wall/pole-mount antenna, with 36-inch external coaxial cables and 4x RP-SMA jacks

Power
Operated at IEEE Std 802.3af power, powered by IEEE Std 802.1af or at PoE (Power over Ethernet) injector or switch
12V external power adapter (sold separately)

Other Interfaces
Networks: One 10/100/1000 BASE-T Ethernet RJ45 uplink (G1), one 10/100/1000 BASE-T Ethernet RJ45 (G2), auto-sensing link speed and MDI/MDX
Four RPSMA RF connectors (For AP822e, external antenna SKU)
One RJ45 port (G1) support IEEE Std 802.3af or at PoE
One USB 2.0 port (Type-A) (disabled)
One console port
One reset button
One Kensington security slot

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TECHNICAL SPECIFICATIONS

PHYSICAL SPECIFICATIONS (continued)

LED Indicators
One tri-color LED over facade for AP status
Additional LEDs for Ethernet activity over two RJ45 ports (G1 & G2)

Mounting
Wall, desktop, or ceiling mount
Three mounting kits included with access point:
650-00232, 15/16" T-bar & wall-mount combo adapter
650-00233, 9/16" T-bar adapter
Flat-surface wall-mount bracket (used with 650-00232)
840-00126, Wall Mount Hardware Kit (including to 669-00004 space, 665-00085 M3x10 screws, & 665-00102-M3x30 screws)

Option (ordered separately)
- CBL-SERIAL-DB9-35, DB9-stereo console cable
- CBL-RJ45-ADAPT-X5, GbE extension adapter
- MNT-FEET-SET-X5, rubber feet for desktop staging

Installation in the Air-Handling Space
AP822e metal enclosure only by removing plastic façade

Dimensions
AP822i or AP822e (with mounting bracket): 7.1" x 7.1" x 2.7" (18.0 cm x 18.0 cm x 6.8 cm)

AP822e without plastic façade: 6.3" x 6.3" x 2.1" (16.1 cm x 16.0 cm x 5.2 cm)

Weight
AP822i (with mounting bracket): 2.3 lb (1.1 kg)
AP822e (with mounting bracket): 1 .9 lb (0.9 kg)
AP822e without façade and mounting bracket: 1.5 lb (0.7 kg)

Environmental
Operating temperature: 32° F to 122° F (0° C to 50° C)
Operating humidity: 5–95% (non-condensing)
Storage temperature: -40° F to 185° F (-40° C to 70° C) ambient
Storage humidity: 5–95% (non-condensing)

REGULATORY APPROVAL

FCC (United States of America)
CE Mark (European Community)
Industry Canada (Canada)
TELEC (Japan)
Safety Approval (worldwide)

For more country-specific regulatory approval, please contact your Meru representative

CERTIFICATIONS

Wi-Fi CERTIFIED™
EU RoHS
CB Report

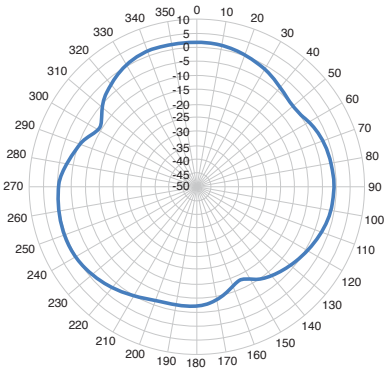
WARRANTY

Limited lifetime warranty

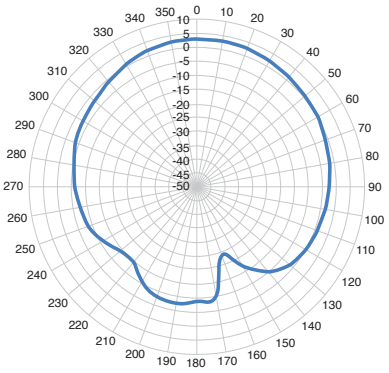
AP822i

Internal Antenna Model

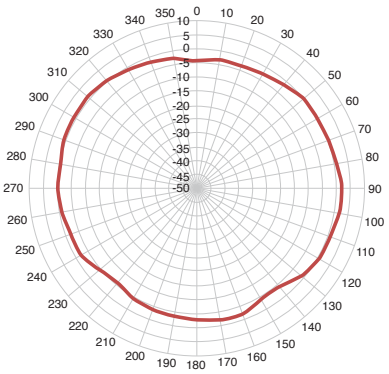
Internal Antenna (MERU-P1633)	2.4 GHz ~ 2.5 GHz	4.9 GHz ~ 5.9 GHz
Average Antenna Gain	3.0 dBi	4.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	195°	190°
Elevation Beam-width	98°	100°
VSWR	1:2.0	1:2.0



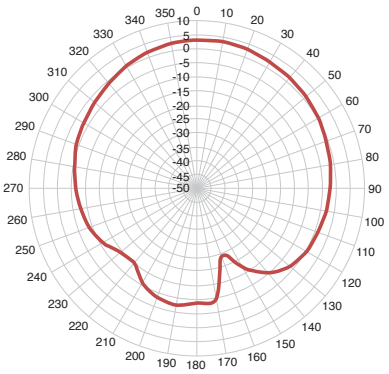
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane



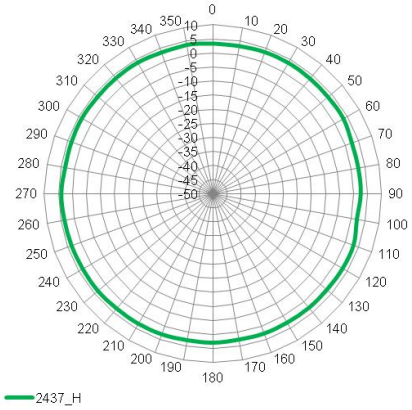
5 GHz E-plane

AP822e

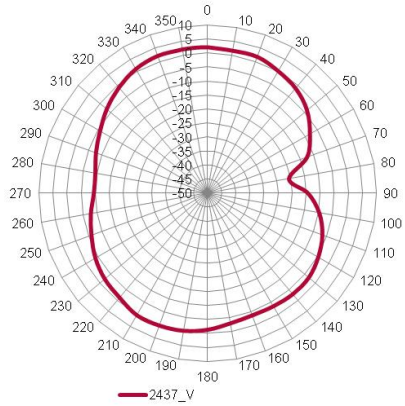
External Antenna Model

External Antenna	2.4 GHz ~ 2.5 GHz	4.9 GHz ~ 5.9 GHz
Average Antenna Gain	3.3 dBi	6.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	360°	360°
Elevation Beam-width	75°	55°
VSWR	1:1.5	1:1.5

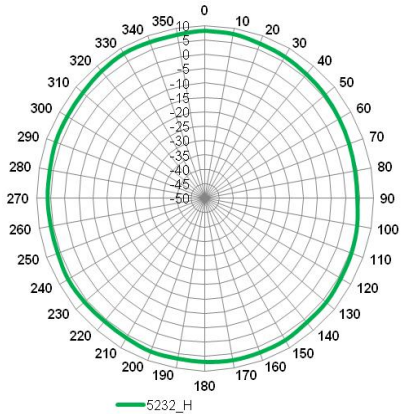
Meru delivers an all-wireless network that fully supports the enterprise, delivering a consistent, interactive experience for all users. No matter what applications they are running. No matter how many other users are on the network.



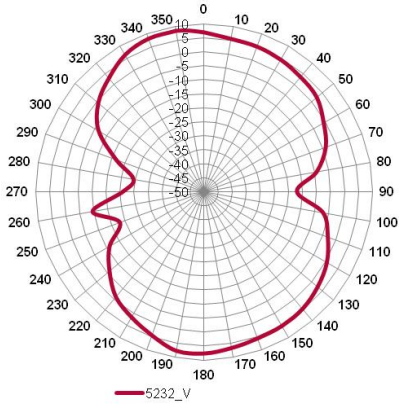
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane



5 GHz E-plane

For more information, visit **www.merunetworks.com** or email your questions to: meru**info@merunetworks.com**

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